

(19)



Europäisches Patentamt

European Patent Office

Office européen des brevets



(11)

EP 0 755 240 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention
of the grant of the patent:
08.12.1999 Bulletin 1999/49

(51) Int. Cl.⁶: **A61H 7/00**

(21) Application number: **95912985.9**

(86) International application number:
PCT/CA95/00167

(22) Date of filing: **23.03.1995**

(87) International publication number:
WO 95/26702 (12.10.1995 Gazette 1995/43)

(54) BODY MASSAGER

KÖRPERMASSAGEGERÄT

DISPOSITIF DE MASSAGE CORPOREL

(84) Designated Contracting States:
DE FR GB IT

(74) Representative:
**Chettle, Adrian John et al
Withers & Rogers,
Goldings House,
2 Hays Lane
London SE1 2HW (GB)**

(30) Priority: **05.04.1994 US 223183**

(56) References cited:
**EP-A- 0 001 833 CH-A- 233 980
GB-A- 498 228 US-A- 2 964 037
US-A- 4 150 668 US-A- 4 730 605**

(43) Date of publication of application:
29.01.1997 Bulletin 1997/05

(73) Proprietor: **NOBLE, Edward D.
Unionville, Ontario L3R 8H4 (CA)**

(72) Inventor: **NOBLE, Edward D.
Unionville, Ontario L3R 8H4 (CA)**

EP 0 755 240 B1

Note: Within nine months from the publication of the mention of the grant of the European patent, any person may give notice to the European Patent Office of opposition to the European patent granted. Notice of opposition shall be filed in a written reasoned statement. It shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

Description**FIELD OF THE INVENTION**

[0001] This invention relates generally to power operated body massagers.

BACKGROUND OF THE INVENTION

[0002] Traditionally, doctors, chiropractors and other professional therapists have used power operated massagers to give treatment involving manipulation of body structures. Therapy of this type has been found particularly effective in treating muscle tension and fatigue, for example in athletes.

DESCRIPTION OF THE PRIOR ART

[0003] Generally, most prior art massagers exert an orbital rubbing action on the body. However, this type of action often causes irritation or other discomfort to the patient. Further, it is thought that the therapeutic effect of this type of rubbing action may not be particularly beneficial and that a percussive massage action may be preferred. Massagers operating on this principle have been proposed. Examples are shown in US-D-261 428, US-A-4 150 668, and in EP-A-0 001 833.

[0004] One method by which the percussive action may be achieved is through the use of a massage head which is coupled to the massager in such a way that pivotal rocking motion of the massage head is permitted. Examples of this type of device are shown in CH-A-233 980, GB-A-498 228, US-A-2 964 037 and US-A-4 730 605.

[0005] Prior art massagers generally are designed primarily for use by health professionals, rather than for home use. For example, the massagers are either held by their base structures or casings, or by handles located adjacent to their base structures or casings. As such, it is difficult to use these massagers for self massage other than on frontal portions of the body. Except through unusual body contortions, it is virtually impossible for the person holding the massager to use it on his or her own shoulder areas, for example.

[0006] Accordingly, an object of the present invention is to provide a massager that is specifically designed so as to be capable of use for self massage. Other improvements in percussive massagers are also provided.

SUMMARY OF THE INVENTION

[0007] According to the invention there is provided a body massager comprising: a base structure, a massage head having an external massage surface contoured symmetrically about a median plane generally normal to a notional plane representing a surface to be massaged, the massage head being coupled to the

base structure for pivotal rocking movement about a pivot axis in said median plane for exerting a percussive massage effect; and, a drive unit carried by said base structure and coupled with said massage head for producing said rocking movement of the head.

[0008] The base structure includes a casing having a slender elongate handle for manipulating the massager, the handle extending about a longitudinal axis and being disposed with said axis in said median plane, the massager being balanced about said plane.

[0009] The drive unit comprises an electric motor having a driven rotary output shaft, and a link extending between the output shaft and the massage head and including an eccentric bearing on said shaft. The link is coupled to the massage head at a position spaced from said median plane for converting rotary motion of the output shaft into rocking motion of the massage head about said pivot axis. The electric motor is positioned with its output shaft co-incident with said longitudinal axis of the handle.

[0010] The massager further comprises means coupled to and extending downwardly from the motor for mounting the massage head for rocking motion about the pivot axis, and a pair of resilient members disposed between the massage head and said mounting means so as to be alternately and oppositely compressed and relaxed as a consequence of said rocking movement of the massage head, for controlling the rocking movement.

[0011] The massage surface is contoured to provide at least two generally hemispherical massage formations disposed symmetrically on median plane characterised in that the handle extends about a longitudinal axis and is disposed with said axis in said median plane, the massager being balanced about said plane; said electric motor is positioned with its output shaft co-incident with said longitudinal axis of the handle; and a pair of resilient members are disposed between said massage head and said mounting means so as to be alternately and oppositely compressed and relaxed as a consequence of said rocking movement of the massage head, so as to control said movement.

[0012] It has been found that a massager having these features is particularly suitable for self massage and as such is appropriate for home use. By virtue of the slender elongate form of the handle, the user can hold the massager in one hand and can conveniently reach most areas of his or her own body on which a massage effect is required. The massager is stable in use and does not vibrate or rock in such a way as to make it difficult to hold. Since the massager is balanced about a median plane which contains the pivot axis of the massage head and the longitudinal axis of the handle, the rocking motion that is imparted to the massage head when the massager is in use tends to cause a reaction that manifests itself as a slight back and forth twisting action of the handle about its longitudinal axis. This action can readily be resisted by the user grasping the handle.

There are no reactive forces that make it difficult to hold the massager changed.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] In order that the invention may be more clearly understood, reference will now be made to the accompanying drawings which illustrate a particular preferred embodiment of the invention by way of example, and in which:

Fig. 1 is a partially exploded perspective view of a body massager in accordance with a preferred embodiment of the invention;
 Fig. 2 is a side elevational view corresponding to Fig. 1, with the massager shown assembled and the casing partly broken away;
 Fig. 3 is a sectional view generally along the line denoted 3-3 in Fig. 2; and,
 Figs. 4 and 5 are somewhat schematic exploded perspective views illustrating other features of the massager.

DESCRIPTION OF PREFERRED EMBODIMENT

[0014] The drawings show what might be termed a "self use" body massager designed for one-handed operation (although there is of course no limitation to self use). The massager has a generally T-shaped configuration overall, and comprises a slender elongate handle with a transverse portion at one end.

[0015] In Fig. 1, the massage head is generally indicated by reference numeral 20 but is only partly visible. The handle includes a fixed lower handle portion 22a and a removable, upper handle portion 22b which is part of a larger plastic moulding generally denoted 24. When assembled, moulding 24 is fitted to the base structure and held in place by screws (not shown). The moulding forms a shroud or casing which encloses the working parts of the massager. An electrical slide switch generally indicated at 26 is incorporated in the moulding for switching the massager on and off.

[0016] The lower handle portion 22a is also a plastic moulding and acts as a housing for other electrical components generally indicated at 28. A power cord 30 extends from the distal end of the handle, via a grommet 32. When the massager is assembled, the switch 26 co-operates with electrical components 28 to allow the drive unit of the massager (to be described) to be switched on and off. Since the electrical components themselves and the particular configuration of the switch are not part of the present invention and may be conventional, details thereof have not been given.

[0017] Fig. 2 shows the massager assembled and perhaps better illustrates the slender elongate configuration of the handle. Fig. 2 also shows that the handle extends about a longitudinal axis A.

[0018] Fig. 3 shows the massage head 20 in detail.

The head has an external massage surface that is contoured symmetrically about a median plane P generally normal to a notional plane N representing a surface to be massaged. The actual massage surface of the massage head is, in this embodiment, defined by a pair of generally hemispherical structures denoted 34 and 36 which are symmetrical about plane P. The two structures are essentially identical except that one of the structures is coupled to a drive unit 38 (to be described) of the massager.

[0019] In this embodiment, the massage surface is shown as being provided by two hemispherical structures only, but it is to be understood that a larger number of hemispheres could be provided symmetrically about plane P. Reference may be made to the assignee's U.S. Patent No. 4,730,605 for an illustration of a multiple hemisphere massage surface.

[0020] The massage head includes a base 40 which is a relatively rigid plastic moulding shaped to provide a pair of dome-shaped inner base elements 42 and 44 within the respective massage hemispheres 34 and 36. Referring to hemisphere 34 by way of example, the massage sphere is completed by a generally hemispherical cover 46 and an intermediate cushion member 48 that occupies substantially the entire space between the base element 42 and the cover 46. Cover 46 is a rubber or other resilient moulding of hemispherical shape with an inwardly directed flange 46a generally at the diameter of the hemisphere, which engages

in a complimentary groove 50 around the base of the dome-shaped base element 42. Thus, cover 46 can be removed by resiliently distorting the cover so as to pull the flange 46a out of groove 50. Cushion member 48 may be made of foam rubber or other resilient material having characteristics selected to provide for an appropriate massage effect on the surface S to be massaged. By removing cover 46 and replacing the cushion member 48 with a member having different characteristics, the massage effect can be varied as desired.

[0021] In practice, the massager would be inverted, the cover 46 essentially "rolled" out of the groove 50 by an upward rolling action applied to the perimeter of the cover, for example by the user's thumbs. Fig. 5 shows by way of example, hemisphere 34 in this orientation with the cover 46 and the cushion member 48 shown in exploded positions. A chamfered surface 52 is provided on moulding 40 adjacent groove 50 to aid removal of the cover in this fashion.

[0022] It should be understood that this aspect of the invention may be applied to massagers other than of the form specifically described and illustrated herein. For example, this aspect of the invention could be applied to a massager of the form shown in the '605 patent mentioned above.

[0023] Referring back to Fig. 3, drive unit 38 comprises an electric motor 54 which has an output shaft 56 extending about an axis B normal to median plane P. In other words, the motor is disposed with its axis trans-

verse to the longitudinal axis A of the massager handle 22 (as shown, for example, in Fig. 1). With continued reference to that view, it will be seen that motor 54 is mounted to the lower handle portion 22a of the massager by a motor mount bracket 58 that extends upwardly from the lower handle portion and curves over and around the casing of the electric motor so as to in effect embrace the motor from above. End portions of the bracket 58, one of which is visible at 60, extend across respective end portions of the motor casing and are secured thereto by screws 62 so that the motor is in effect suspended from bracket 58. In this particular embodiment, the motor mounting bracket 58 is formed integrally as part of the same plastic moulding as lower handle portion 22a, although it is to be understood that this is not essential. It should also be noted that this form of "suspension" motor mount can be used in a form of massager other than that specifically described herein.

[0024] It can also be seen from Fig. 1 that the motor output shaft 56 is coupled to the massage head by a link 64 which is captive on the outer end of shaft 56 but within which the shaft can rotate. Link 64 is a plastic moulding which provides at its upper end an eccentric bearing 66 on shaft 56. Accordingly, as shaft 56 rotates, link 64 imparts a generally up and down oscillatory motion to the massage head. An eccentric counterbalance weight 68 is also provided on shaft 56 to dynamically balance the drive unit and avoid undesirable vibrations when the drive motor is running.

[0025] As best seen in Fig. 3, link 64 has at its lower end an enlarged head 70 which includes a shank 70a of reduced diameter, to which is fitted a resilient annular disk 71. Disk 71 is held in place in a recess 50a in the plastic moulding 40 of the massage head by a ring 72 that is secured to the moulding by three screws, one of which is shown at 73. Ring 72 is generally annular but has a flat across its external circumferential edge.

[0026] It was noted previously that motor 54 is suspended from motor mount bracket 58. The massage head 20 is in turn suspended from motor 54 by a bracket 74 (Fig. 3) that is bolted to the motor casing in much the same fashion as motor mount bracket 58 (see Fig. 1). Bracket 74 carries a depending sleeve indicated as 76, which aligns with a pair of similar sleeves (not specifically shown) on the massage head moulding 40. The sleeves on the moulding are at opposite ends of sleeve 76 and a pivot pin 78 connects the three sleeves and provides for pivotal mounting of the massage head on bracket 74. It will be seen that pivot pin 78 is positioned on the median plane P of the massage head.

[0027] Rocking motion of the massage head about pivot pin 78 is controlled by a pair of resiliently compressible sleeves 80, 82 that are disposed on opposite sides of the pivot pin 78 and extend between the massage head moulding 40 and the motor bracket 74. It will be appreciated from Fig. 3 that the two sleeves 78 and 80 are alternately and oppositely compressed and

5 relaxed as the massage head 20 rocks about pivot pin 78. The sleeves act to in effect damp the rocking motion. By appropriately selecting the dimensions and characteristics of the sleeves the amount of damping and hence the nature of the percussive massage action can be appropriate controlled.

10 [0028] Fig. 4 shows sleeve 80 by way of example and illustrates in some detail how the sleeve is located between the motor bracket 74 and moulding 40. Thus, it will be seen that a generally cone-shaped depression or "dimple" 84 extends downwardly from bracket 74 into the upper end of the sleeve. At its lower end, sleeve 80 is received in an annular formation 86 on moulding 40. It will be appreciated that this arrangement allows the sleeves to be changed quite easily if necessary.

15 [0029] As noted previously, an important feature of applicant's invention is that the massager has a slender elongate handle extending about an longitudinal axis that is positioned in the median plane of the massage head and that that plane also contains the pivot axis for the head. As shown in Fig. 2, the axis A of the handle is also positioned to intersect the longitudinal axis B of the drive unit motor 54. It is also important that the massager be symmetrically balanced about median plane P by appropriate design and positioning of the various components of the massager and, in particular, appropriate positioning of the motor and its associated components with respect to plane P (see Fig. 3).

20 30 Claims

1. A body massager comprising:

25 a base structure;

30 a massage head (20) having an external massage surface (34,36) contoured symmetrically about a median plane (P) generally normal to the notional plane (N) representing a surface to be massaged, the massage head (20) being coupled to the base structure to allow pivotal rocking movement about a pivot axis in said median plane to exert a percussive massage effect; and,

35 40 45 a drive unit (54) carried by said base structure and coupled with said massage head (20) to produce said rocking movement of the head (20);

50 55 said base structure including a casing (24) having a slender elongate handle (22) for manipulating the massager;

wherein said drive unit (54) comprises an electric motor (54) having a driven rotary output shaft (56), and a link (64) extending between said shaft (56) and said massage head (20)

and including an eccentric bearing (68) on said shaft, the link (64) being coupled to the massage head (20) at a position spaced from said median plane (P) to convert rotary motion of the output shaft (56) into rocking motion of the massage head (20) about said pivot axis;

the massager further comprising mounting means (74) coupled to and extending from said motor (54) mounting said massage head (20) to allow rocking motion about said pivot axis;

and wherein said massage surface (34,46) is contoured to provide at least two generally hemispherical massage formations disposed symmetrically on opposite sides of said median plane characterised in that the handle extends about a longitudinal axis and is disposed with said axis in said median plane, the massager being balanced about said plane;

said electric motor (54) is positioned with its output shaft (56) co-incident with said longitudinal axis of the handle (22); and

a pair of resilient members (80,82) are disposed between said massage head (20) and said mounting means (74) so as to be alternately and oppositely compressed and relaxed as a consequence of said rocking movement of the massage head, so as to control said movement.

2. A massager as claimed in claim 1 wherein said handle (22) includes a fixed lower portion (22a) and a separable upper portion (22b), said upper portion forming part of a casing which encloses said drive motor (54).
3. A massager as claimed in claim 2, further comprising a motor mount bracket (58) which extends upwardly from said handle lower portion (22a) and extends around and embraces said drive motor (54) from above, so that the motor is suspended from said motor mount bracket (58), said casing enclosing said motor (54) and bracket (58).
4. A massager as claimed in claim 1, wherein said resilient members (80,82) are cylindrical sleeves, each having a first end received in a complimentary recess (86) in said massage head (20) and a second end receiving a locating formation on said motor bracket (74).
5. A massager as claimed in claim 1, wherein each said massage formation (34,36) comprises a dome-shaped inner base element (42,44), an outer cover (46) which is removably coupled to said base ele-

ment, and a separate and replaceable intermediate cushion member (48) between said base element (42,44) and said cover (46), said cushion member (48) having resiliency characteristics selected to provide for a desired massage effect.

Patentansprüche

1. Körpermassagegerät mit:
 - einer Basisstruktur;
 - einem Massagekopf (20) mit einer äußeren Massagefläche (34, 36), die symmetrisch um eine Mittelebene (P) konfiguriert ist, welche im wesentlichen senkrecht zu der eine zu massierende Fläche repräsentierenden fiktiven Ebene (N) verläuft, wobei der Massagekopf (20) mit der Basisstruktur verbunden ist, um eine Schwingbewegung um eine Schwenkachse in der Mittelebene zu ermöglichen und einen schlagenden Massageneffekt zu erzielen; und
 - einer von der Basisstruktur getragenen und mit dem Massagekopf (20) zum Erzeugen der Schwingbewegung des Kopfs (20) verbundene Antriebseinheit (54);
 - wobei die Basisstruktur ein Gehäuse (24) mit einem schmalen länglichen Griff zum Handhaben des Massagegeräts aufweist;
 - wobei die Antriebseinheit (54) einen Elektromotor (54) mit einer getriebenen drehenden Abtriebswelle (56) und ein Verbindungs-element (64) aufweist, das sich zwischen der Welle (56) und dem Massagekopf (20) erstreckt und ein Lager (68) auf der Welle aufweist, wobei das Verbindungs-element (64) mit dem Massagekopf (20) an einer von der Mittelebene (P) beabstandeten Position angeordnet ist, um die Drehbewegung der Abtriebswelle (56) in eine Schwingbewegung des Massagekopfs (20) um die Schwenkachse umzusetzen;
 - wobei das Massagegerät ferner eine mit dem Motor (54) verbundene und sich von diesem aus erstreckende Befestigungseinrichtung (74) aufweist, die den Massagekopf (20) zur Schwingbewegung um die Schwenkachse hält;
 - und wobei die Massagefläche (34, 36) derart konturiert ist, daß sie wenigstens zwei im wesentlichen halbkugelförmige Massageausformungen bildet, die symmetrisch auf gegenüberliegenden Seiten der Mittelebene angeordnet sind, dadurch gekennzeichnet,

daß der Griff sich um eine Längsachse erstreckt und mit dieser Achse in der Mittel-ebene angeordnet ist, wobei das Masssgege-
rät um diese Ebene ausbalanciert ist;

- daß der Elektromotor (54) derart angeordnet ist, daß seine Abtriebswelle (56) mit der Längs-
achse des Griffes (22) zusammenfällt; und

- daß zwei elastische Elemente (80, 82) zwi-
schen dem Massagekopf (20) und der Befestigungsseinrichtung (74) derart angeordnet sind,
daß sie infolge der Schwingbewegung des
Masssgekops abwechselnd zusammengen-
drückt und entspannt werden, um so die Bewe-
gung zu kontrollieren.

2. Massagegerät nach Anspruch 1, bei dem der Griff (22) ein feststehendes unteres Teil (22a) und ein abnehmbares oberes Teil (22b) aufweist, wobei das obere Teil Bestandteil eines den Antriebsmotor (54) umschließenden Gehäuses ist.

3. Massagegerät nach Anspruch 2, ferner mit einem Motorbefestigungsträger (58), der sich vom unteren Teil (22a) des Griffes nach oben erstreckt und den Antriebsmotor (54) von oben umgreift, so daß der Motor von dem Motorbefestigungsträger (58) her-
abhängt, wobei das Gehäuse den Motor (54) und den Träger (58) umschließt.

4. Massagegerät nach Anspruch 1, bei dem die elasti-
schen Elemente(80, 82) zylindrische Hülsen sind,
deren erstes Ende jeweils in einer komplementären Ausnehmung (86) in dem Massagekopf (20) aufge-
nommen ist und deren zweites Ende jeweils eine Positionierungsausformung an dem Motorträger (74) aufnimmt.

5. Massagegerät nach Anspruch 1, bei dem jede Massageausformung (34, 36) ein kuppelförmiges inneres Basiselement (42, 44), eine lösbar mit dem Basiselement verbundene äußere Abdeckung (46) und ein separates und austauschbares Zwischen-
kissenteil (48) zwischen dem Basiselement (42, 44) und der Abdeckung (46) aufweist, wobei die Elasti-
zitätseigenschaften des Kissenteils (48) derart gewählt sind, daß ein gewünschter Massageeffekt erreicht wird.

Revendications

1. Appareil de massage corporel comprenant :

une structure de base ;
une tête de massage (20) comportant une sur-
face de massage externe (34, 36) formée de
façon symétrique autour d'un plan médian (P)

généralement normal au plan imaginaire (N)
représentant une surface à masser, la tête de
massage (20) étant reliée à la structure de
base de façon à permettre un mouvement
oscillant pivotant autour d'un axe de pivotement
dans ledit plan médian afin d'exercer un
effet de massage par percussion ; et,

une unité d'entraînement (54) supportée par
ladite structure de base et reliée à ladite tête de
massage (20) afin de produire ledit mouvement
oscillant de la tête (20) ;

ladite structure de base comprenant un boîtier
(24) comportant une poignée allongée mince
(22) permettant de manipuler l'appareil de
massage ;

dans lequel ladite unité d'entraînement (54)
comprend un moteur électrique (54) compor-
tant un arbre de sortie rotatif entraîné (56), et
une pièce de liaison (64) qui s'étend entre ledit
arbre (56) et ladite tête de massage (20) et
comprend un palier excentrique (68) sur ledit
arbre, la pièce de liaison (64) étant reliée à la
tête de massage (20) en un emplacement
espacé dudit plan médian (P) afin de convertir
le mouvement rotatif de l'arbre de sortie (56) en
un mouvement oscillant de la tête de massage
(20) autour dudit axe de pivotement ;

l'appareil de massage comprenant en outre un
moyen de montage (74) relié audit moteur (54)
et s'étendant à partir de celui-ci, supportant
ladite tête de massage (20) de façon à permet-
tre le mouvement oscillant autour dudit axe de
pivotement ;

et dans lequel ladite surface de massage (34,
36) est formée de façon à définir au moins
deux corps de massage généralement hémis-
phériques, disposés de façon symétrique sur
les côtés opposés dudit plan médian, caracté-
risé en ce que la poignée s'étend suivant un
axe longitudinal, et est disposée avec ledit axe
dans ledit plan médian, l'appareil de massage
étant équilibré autour dudit plan ;

ledit moteur électrique (54) est positionné avec
son arbre de sortie (56) concourant avec ledit
axe longitudinal de la poignée (22) ; et

une paire d'éléments élastiques (80, 82) sont
disposés entre ladite tête de massage (20) et
ledit moyen de montage (74) de manière à être
comprimés et détendus en alternance et de
façon opposée à la suite dudit mouvement
oscillant de la tête de message, de manière à
commander ledit mouvement.

2. Appareil de massage selon la revendication 1, dans
lequel ladite poignée (22) comprend une partie
inférieure fixe (22a) et une partie supérieure amovible
(22b), ladite partie supérieure formant une par-
tie d'un boîtier qui enferme ledit moteur

d'entraînement (54).

3. Appareil de massage selon la revendication 2, comprenant en outre un support de montage de moteur (58) qui s'étend vers le haut à partir de ladite partie inférieure de poignée (22a) et s'étend autour dudit moteur d'entraînement (54) et le maintient depuis le dessus, de sorte que le moteur est suspendu audit support de montage de moteur (58), ledit boîtier enfermant ledit moteur (54) et ledit support (58). 5 10

4. Appareil de massage selon la revendication 1, dans lequel lesdits éléments élastiques (80, 82) sont des manchons cylindriques, comportant chacun une première extrémité logée dans un événement complémentaire (86) de ladite tête de massage (20) et une seconde extrémité logeant une protubérance de positionnement sur ledit support de moteur (74). 15

5. Appareil de massage selon la revendication 1, dans lequel chaque dit corps de massage (34, 36) comprend un élément de base interne en forme de dôme (42, 44), un couvercle externe (46) qui est fixé de façon amovible audit élément de base, et un élément d'amortissement intermédiaire séparé et remplaçable (48) entre ledit élément de base (42, 44) et ledit couvercle (46), ledit élément d'amortissement (48) présentant des caractéristiques d'élasticité sélectionnées de façon à permettre un effet de massage voulu. 20 25 30

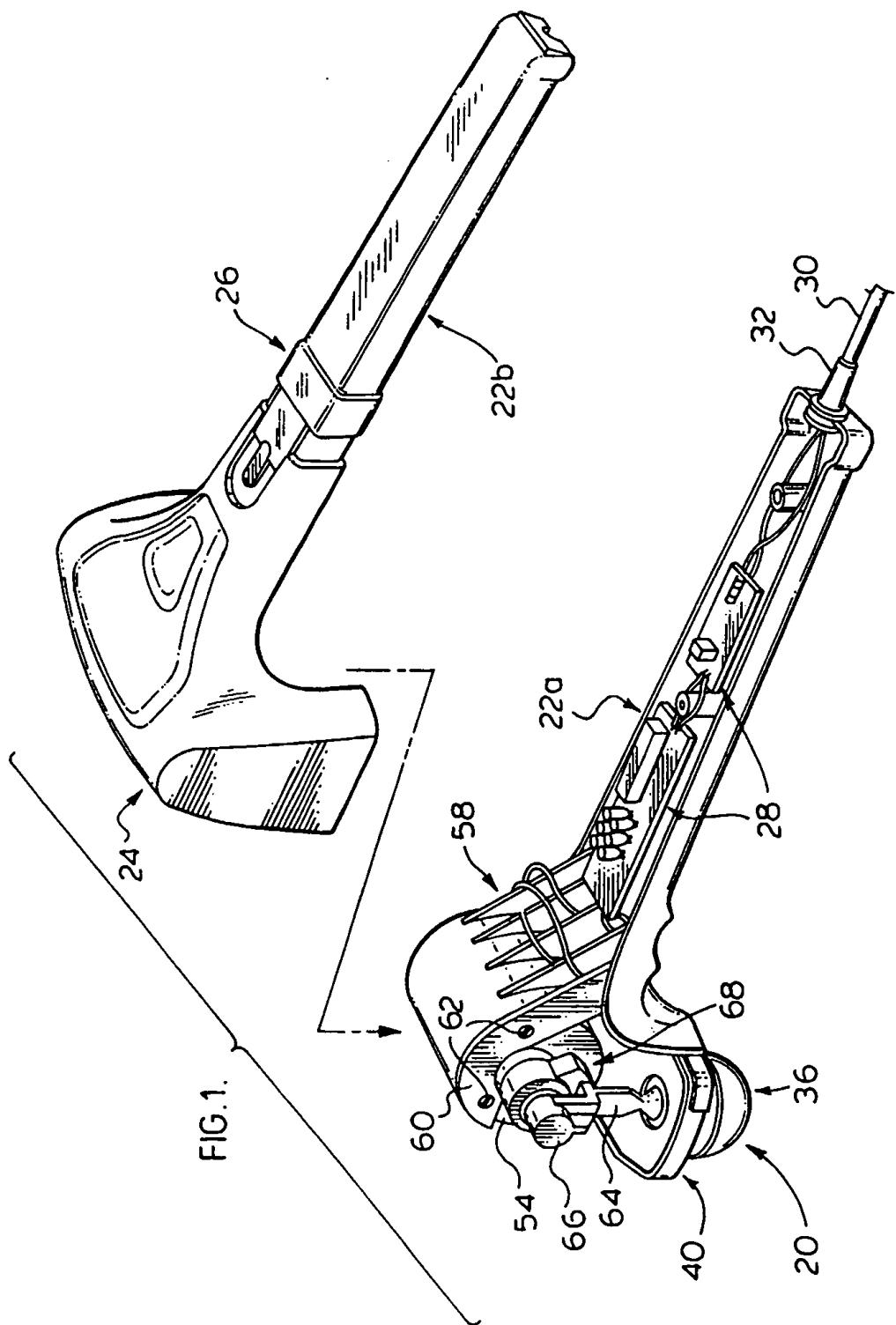
35

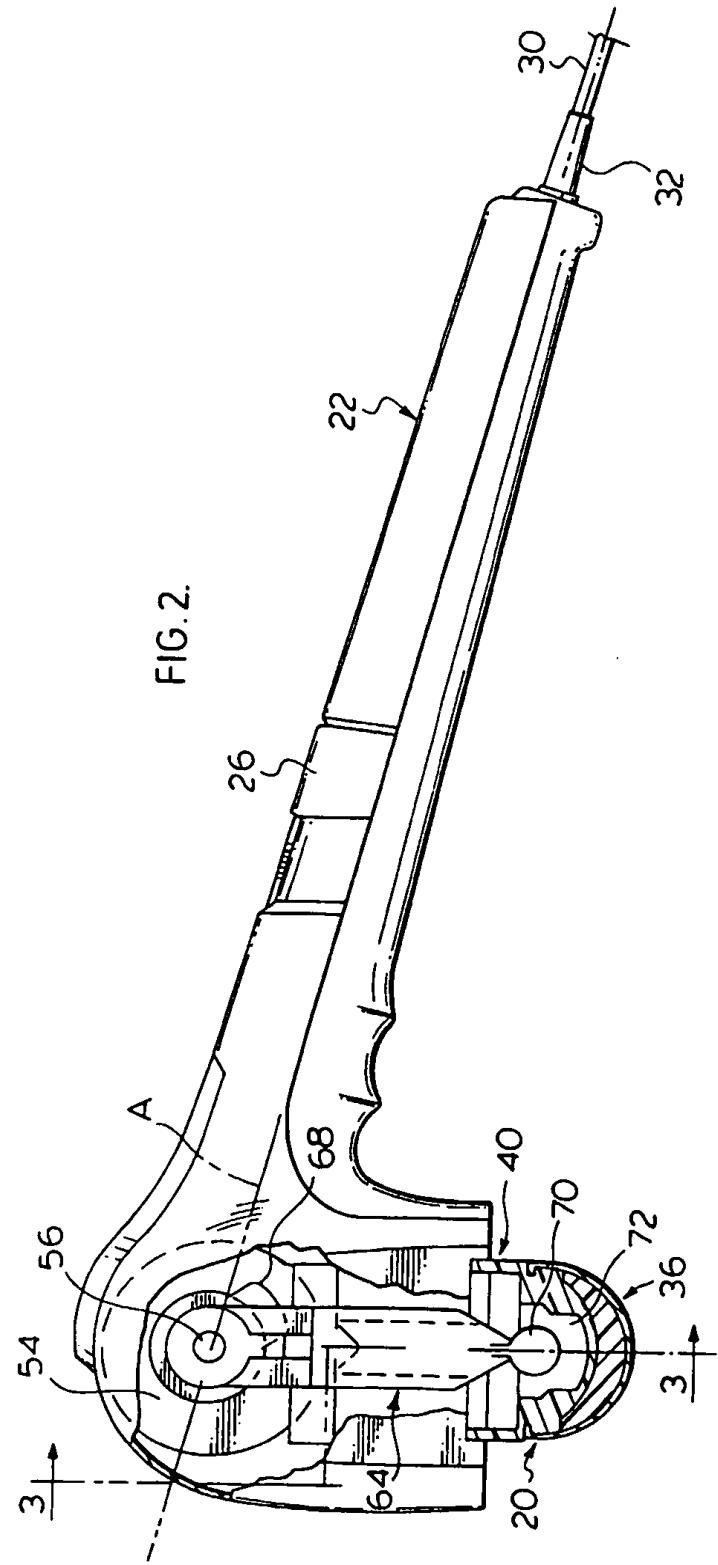
40

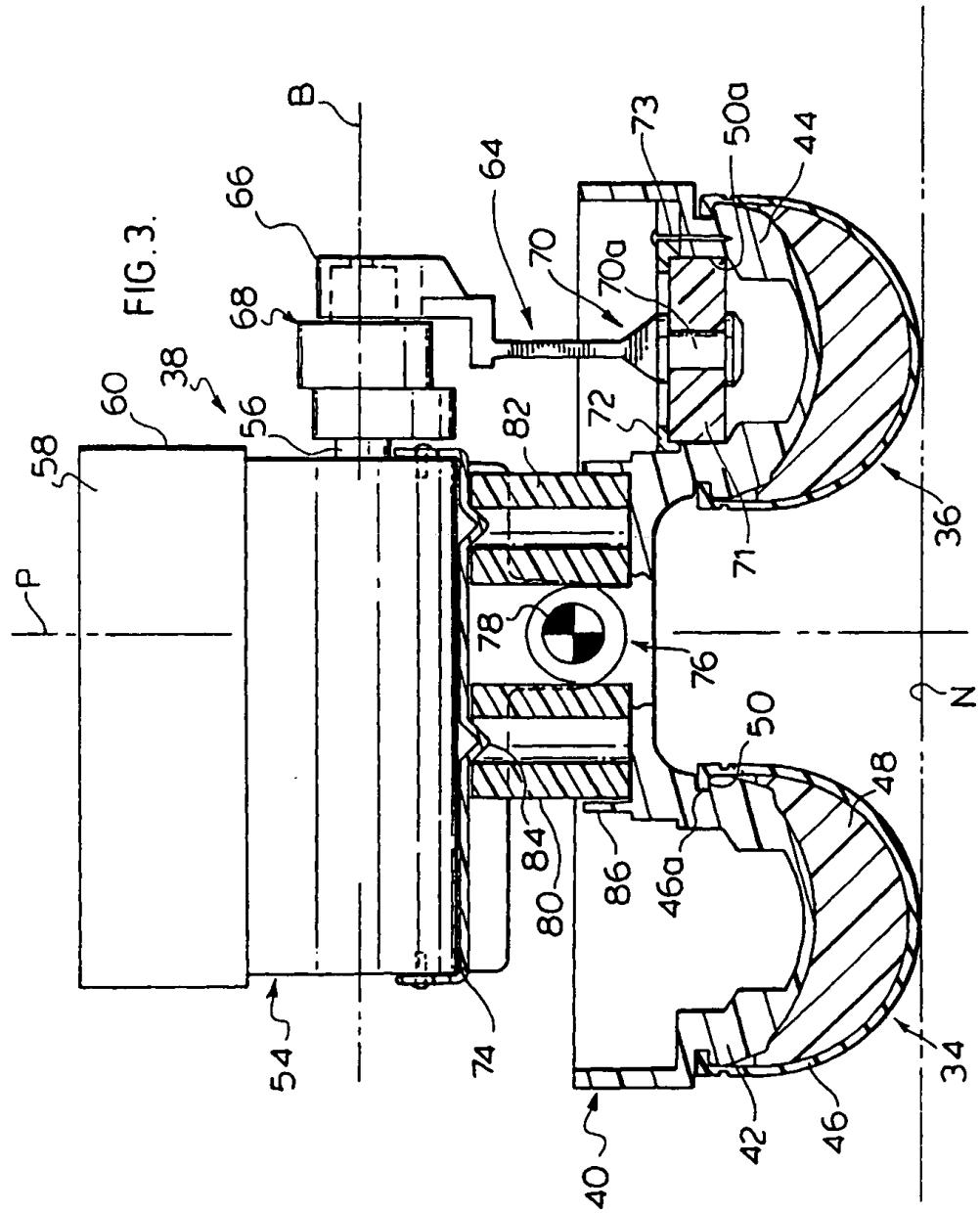
45

50

55







PCL XL error

Subsystem: KERNEL
Error: IllegalTag
Operator: 0x82
Position: 15428